REMARKS/ARGUMENTS

The Applicants have carefully considered this application in connection with the Examiner's Action and respectfully request reconsideration of this application in view of the following remarks.

The Applicants originally submitted Claims 1-20 in the application. In a previous response to an Election Requirement, the Applicants elected to pursue Claims 9-17 and canceled Claims 1-8, 13 and 18-20. In a previous response to an Examiner's Action, the Applicants canceled Claim 14. Presently, no claims have been amended, added or canceled. Accordingly, Claims 9-12 and 15-17 are currently pending in the application.

I. Rejection of Claims 9, 10 and 15 under 35 U.S.C. §102

The Examiner has rejected Claims 9, 10 and 15 under 35 U.S.C. §102(b) as being anticipated by WO 00/57446 to Jones, *et al.* ("Jones"). Independent Claim 9 currently includes the element of forming an indium doped dielectric layer over at least a portion of an active region, wherein the indium doped dielectric layer has an indium concentration ranging from about 1 mole weight percent to about 15 mole weight percent. Among other elements, Jones fails to disclose the element that the indium concentration ranges from about 1 mole weight percent to about 15 mole weight percent.

Jones is directed to high efficiency electrodes for Organic Light Emitting Diode Devices (OLEDs). Contrary to what the Examiner believes, Jones only teaches that its layer of doped dielectric material 410 is doped to include between about 5 and 50 percent of conducting material, and not an indium concentration ranging from about 1 mole weight percent to about 15 mole weight

percent. Mole weight percent and standard percent are two totally different measurements. Something that has between 5 and 50 weight percent of a conducting material does not necessarily have from 5 mole weight percent to 50 mole weight percent of the conducting material.

Actually, Jones further teaches a mole weight percent of indium outside of the claimed range. For example, Jones at page 7, lines 25 thru 30 discloses that "the doped dielectric material 410 is preferably formed by co-evaporating a thin layer (approximately 5 nm) of LiF or SiO with 30 wt% In or Sn through a shadow mask..." The 30 mole weight percent of indium required by Jones is outside of the range claimed in independent Claim 9.

Therefore, Jones does not disclose each and every element of the claimed invention and as such, is not an anticipating reference. Because Claims 10 and 15 are dependent upon Claim 9, Jones also cannot be an anticipating reference for Claims 10 and 15. Accordingly, the Applicants respectfully request the Examiner to withdraw the §102 rejection with respect to these Claims.

II. Rejection of Claims 9, 11 and 12 under 35 U.S.C. §102

The Examiner has rejected Claims 9, 11 and 12 under 35 U.S.C. §102(e) as being anticipated by Osenbach. Independent Claim 9 currently includes the element of forming an indium doped dielectric layer over an active region formed over a semiconductor substrate, wherein the indium doped dielectric region has an indium concentration ranging from about 1 mole weight percent to about 15 mole weight percent. Among other elements, Osenbach fails to disclose the indium doped dielectric layer formed over a semiconductor substrate.

Osenbach is directed to optical devices using non-concentric crystals, such as lithium niobate, having improved temperature stability as compared to conventional devices using non-

concentric crystals. (Abstract) Osenbach teaches that a buffer layer 13 including indium or comprising an indium oxide may be positioned between the waveguide 15 and the electrodes 11 to prevent light traveling through the waveguide 15 from being adsorbed by the electrodes 11, but over the lithium niobate substrate. What the Examiner refers to as a semiconductor substrate is not that at all. As lithium niobate has no semiconductor properties, the lithium niobate substrate is not a semiconductor substrate, as asserted by the Examiner.

Therefore, Osenbach does not disclose each and every element of the claimed invention and as such, is not an anticipating reference. Because Claims 11 and 12 are dependent upon Claim 9, Osenbach also cannot be an anticipating reference for Claims 11 and 12. Accordingly, the Applicants respectfully request the Examiner to withdraw the §102 rejection with respect to these Claims.

III. Rejection of Claims 11 and 12 under 35 U.S.C. §103

The Examiner has rejected Claims 11 and 12 under 35 U.S.C. §103(a) as being unpatentable over Jones. As previously recited, independent Claim 9 currently includes the element of forming an indium doped dielectric layer over at least a portion of an active region, wherein the indium doped dielectric layer has an indium concentration ranging from about 1 mole weight percent to about 15 mole weight percent. As previously submitted, Jones fails to teach this element.

Not only does Jones fail to teach this element, Jones fails to suggest this element. More important, Jones teaches away from using an indium concentration ranging from about 1 mole weight percent to about 15 mole weight percent. A teaching away from a claimed element, as is

present in Jones with respect to the required indium concentration of 30 wt%, is prima facie evidence of nonobviousness. Therefore, Jones also fails to suggest this element.

Jones, therefore, fails to teach or suggest the invention recited in independent Claim 9 and its dependent claims, when considered as a whole. Thus, Jones fails to establish a prima facie case of obviousness with respect to those claims. Claims 11 and 12 are therefore not obvious in view of Jones.

In view of the foregoing remarks, the cited reference does not support the Examiner's rejection of Claims 11 and 12 under 35 U.S.C. §103(a). The Applicants therefore respectfully request the Examiner withdraw the rejection.

IV. Rejection of Claim 16 under 35 U.S.C. §103

The Examiner has rejected Claim 16 under 35 U.S.C. §103(a) as being unpatentable over Jones in view of Publication No. JP2001-195789 to Kyo, *et al.* ("Kyo"). As previously recited, independent Claim 9 currently includes the element of forming an indium doped dielectric layer over at least a portion of an active region, wherein the indium doped dielectric layer has an indium concentration ranging from about 1 mole weight percent to about 15 mole weight percent. As previously established, Jones fails to teach or suggest this element. Similarly, Kyo fails to teach or suggest this element.

The Examiner is offering Kyo for the sole proposition that an indium doped dielectric layer may be forming using a PVD process and using a target that comprises silicon dioxide and indium. Notwithstanding the accuracy of this argument, Kyo fails to teach or suggest the missing element of Jones. Specifically, Kyo fails to teach or suggest the element that the indium concentration ranges

from about 1 mole weight percent to about 15 mole weight percent. Even if Kyo did teach or suggest this element, one skilled in the art would not be motivated to combine the teachings of Jones and Kyo because of Jones' teaching away from using a mole weight percent of indium less than 30. Therefore, Kyo fails to cure the deficiencies in the teachings or suggestions of Jones.

Jones, either alone or in combination with Kyo, thus fails to teach or suggest the invention recited in independent Claim 9 and its dependent claims, when considered as a whole. Therefore, the combination fails to establish a prima facie case of obviousness with respect to those claims. Claim 16 is therefore not obvious in view of the combination.

In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claim 16 under 35 U.S.C. §103(a). The Applicants therefore respectfully request the Examiner withdraw the rejection.

V. Rejection of Claim 17 under 35 U.S.C. §103

The Examiner has rejected Claim 17 under 35 U.S.C. §103(a) as being unpatentable over Jones in view of U.S. Patent No. 5,397,920 to Tran ("Tran"). As previously recited, independent Claim 9 currently includes the element of forming an indium doped dielectric layer over at least a portion of an active region, wherein the indium doped dielectric layer has an indium concentration ranging from about 1 mole weight percent to about 15 mole weight percent. As previously established, Jones fails to teach or suggest this element. Similarly, Tran fails to teach or suggest this element.

The Examiner is offering Tran for the sole proposition that an indium doped dielectric layer may be forming using a specific range of pressures, radio frequencies and gas flow rates.

Notwithstanding the accuracy of this argument, Tran fails to teach or suggest the missing element of Jones. Specifically, Tran fails to teach or suggest the element that the indium concentration ranges from about 1 mole weight percent to about 15 mole weight percent. Even if Tran did teach or suggest this element, one skilled in the art would not be motivated to combine the teachings of Jones and Tran because of Jones' teaching away from using a mole weight percent of indium less than 30. Therefore, Tran fails to cure the deficiencies in the teachings or suggestions of Jones.

Jones, either alone or in combination with Tran, thus fails to teach or suggest the invention recited in independent Claim 9 and its dependent claims, when considered as a whole. Therefore, the combination fails to establish a prima facie case of obviousness with respect to those claims. Claim 17 is therefore not obvious in view of the combination.

In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claim 17 under 35 U.S.C. §103(a). The Applicants therefore respectfully request the Examiner withdraw the rejection.

VI. Rejection of Claim 10 under 35 U.S.C. §103

The Examiner has rejected Claim 10 under 35 U.S.C. §103(a) as being unpatentable over Osenbach in view of U.S. Patent No. 6,051,884 to Papadas ("Papadas"). As previously recited, independent Claim 9 currently includes the element of forming an indium doped dielectric layer over an active region formed over a semiconductor substrate, wherein the indium doped dielectric region has an indium concentration ranging from about 1 mole weight percent to about 15 mole weight percent. The combination fails to teach or suggest this element.

As discussed above, Osenbach is directed to optical devices using non-concentric crystals, such as lithium niobate, having improved temperature stability as compared to conventional devices using non-concentric crystals. In contrast, Papadas is directed to a method for forming interconnections in a semiconductor integrated circuit. The Examiner is incorrectly arguing that it would have been obvious to one skilled in the art to modify Osenbach by incorporating interlevel dielectric including indium, as taught by Papadas.

One skilled in the art would not be motivated to use the interlevel dielectric including indium of Papadas with the device of Osenbach for a number of reasons. First, including the interlevel dielectric including indium over the non-concentric crystal and waveguide of Osenbach would feasiblely have no effect on the non-concentric crystal substrate, and for this reason would never be used. Those skilled in the art understand the extreme costs associated with adding additional processing steps to an already existing process, and unless the additional processing steps provide an advantage, they would not be used. Accordingly, one skilled in the art would not be motivated to combine the interlevel dielectric layer including indium of Papadas into the device of Osenbach.

Second, one skilled in the art would not be motivated to combine the teachings of the two references because they are non-analogous art. While both may have an indium doped layer, one is directed to a semiconductor microelectronics device and the other is directed to a non-concentric crystal modulating device. The sheer difference in their purposes, as well as the materials used to form the different devices, would be enough to convince one skilled in the art that a teaching in one is not applicable for a teaching in another. Thus, again, one skilled in the art would not be motivated to combine the interlevel dielectric layer including indium of Papadas into the device of Osenbach.

Therefore, the combination of Osenbach and Papadas is improper. As the combination is improper, and neither Osenbach nor Papadas alone teaches or suggest all of the claimed elements, the references fail to establish a prima facie case of obviousness. Claim 10 is therefore not obvious in view of Osenbach and Papadas.

In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claim 10 under 35 U.S.C. §103(a). The Applicants therefore respectfully request the Examiner withdraw the rejection.

VII. Rejection of Claims 15 and 16 under 35 U.S.C. §103

The Examiner has rejected Claims 15 and 16 under 35 U.S.C. §103(a) as being unpatentable over Osenbach in view of Kyo. As previously recited, independent Claim 9 currently includes the element of forming an indium doped dielectric layer over an active region formed over a semiconductor substrate, wherein the indium doped dielectric region has an indium concentration ranging from about 1 mole weight percent to about 15 mole weight percent. The combination fails to teach or suggest this element.

As discussed above, Osenbach is directed to optical devices using non-concentric crystals, such as lithium niobate, having improved temperature stability as compared to conventional devices using non-concentric crystals. In contrast, Kyo is directed to a method for manufacturing a semiconductor device, including forming an indium doped dielectric layer using a PVD process and using a target that comprises silicon dioxide and indium. The Examiner is incorrectly arguing that it would have been obvious to one skilled in the art to modify the method for manufacturing the

indium doped layer of Osenbach to include the PVD process and target that comprises silicon dioxide and indium, as taught by Kyo

One skilled in the art would not be motivated to manufacture the indium doped layer of Osenbach using the specific processing conditions taught by Kyo for a number of reasons. Most important, one skilled in the art would not be motivated to combine the teachings of the two references because they are non-analogous art. While both may have an indium doped layer, one is directed to a semiconductor microelectronics device and the other is directed to a non-concentric crystal modulating device. The sheer difference in their purposes, as well as the materials used to form the different devices, would be enough to convince one skilled in the art that a teaching in one is not applicable for a teaching in another. Thus, again, one skilled in the art would not be motivated to combine the method for forming the indium doped layer of Kyo with the method of Osenbach.

Therefore, the combination of Osenbach and Kyo is improper. As the combination is improper, and neither Osenbach nor Kyo alone teaches or suggest all of the claimed elements, the references fail to establish a prima facie case of obviousness. Claims 15 and 16 are therefore not obvious in view of Osenbach and Kyo.

In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claims 15 and 16 under 35 U.S.C. §103(a). The Applicants therefore respectfully request the Examiner withdraw the rejection.

VIII. Rejection of Claim 17 under 35 U.S.C. §103

The Examiner has rejected Claim 17 under 35 U.S.C. §103(a) as being unpatentable over Osenbach in view of Tran. As previously recited, independent Claim 9 currently includes the

element of forming an indium doped dielectric layer over an active region formed over a semiconductor substrate, wherein the indium doped dielectric region has an indium concentration ranging from about 1 mole weight percent to about 15 mole weight percent. The combination fails to teach or suggest this element.

As discussed above, Osenbach is directed to optical devices using non-concentric crystals, such as lithium niobate, having improved temperature stability as compared to conventional devices using non-concentric crystals. In contrast, Tran is directed to a method for manufacturing a semiconductor device, including forming an indium doped dielectric layer using various processing conditions. The Examiner is incorrectly arguing that it would have been obvious to one skilled in the art to manufacture the indium doped layer of Osenbach using the specific processing conditions taught by Tran.

One skilled in the art would not be motivated to manufacture the indium doped layer of Osenbach using the specific processing conditions taught by Tran for a number of reasons. Most important, one skilled in the art would not be motivated to combine the teachings of the two references because they are non-analogous art. While both may have an indium doped layer, one is directed to a semiconductor device and the other is directed to a non-concentric crystal modulating device. The sheer difference in their purposes, as well as the materials used to form the different devices, would be enough to convince one skilled in the art that a teaching in one is not applicable for a teaching in another. Thus, again, one skilled in the art would not be motivated to combine the method for forming the indium doped layer of Tran with the method of Osenbach.

Therefore, the combination of Osenbach and Tran is improper. As the combination is improper, and neither Osenbach nor Tran alone teaches or suggest all of the claimed elements, the

references fail to establish a prima facie case of obviousness. Claim 17 is therefore not obvious in view of the combination.

In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claim 17 under 35 U.S.C. §103(a). The Applicants therefore respectfully request the Examiner withdraw the rejection.

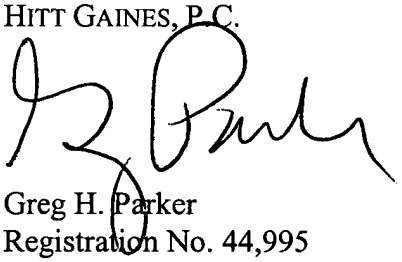
IX. Conclusion

In view of the foregoing remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 9-12 and 15-17.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application.

Respectfully submitted,

HITT GAINES, P.C.



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